

enema is the method *par excellence* for examination of colonic growths. A large sized growth not producing obstruction may be frequently overlooked by means of the bismuth meal, but will almost invariably be shown by the enema method. This is particularly true when located in the descending colon and sigmoid, which are seldom properly filled when the bismuth is given by mouth.

In conclusion, we hope that we have shown the great aid afforded by the roentgen-ray examination in the diagnosis of lesions in the lower right quadrant. We must bear in mind, however, that this is but one of the many methods by which conclusions may be drawn concerning these intricate disturbances. Like all other methods of diagnosis, at times, by faulty interpretation of shadows, we may be led to a wrong conclusion. As with other lesions the lower right quadrant disturbances should be studied in conjunction with the clinical signs. If the roentgen-ray interpretation is diametrically opposed to all the clinical findings and the two methods cannot be harmonized it is probably wise to adhere to the clinical interpretation. In other words, no one method of diagnosis must be looked upon as absolute.

ERRORS IN THE DIAGNOSIS AND TREATMENT OF DUODENAL ULCER.¹

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DUODENAL ulcer without complications is to be considered in this paper.

The anamnesis will always be considered the most important single factor upon which to predicate a diagnosis of this disease. After describing the typical history, Moynihan says: "It is therefore not necessary to the attaining of a diagnosis that any examination of the patient be made; the anamnesis is everything, the physical examination is relatively nothing."

In a footnote the distinguished author disclaims any desire to eliminate an examination in the diagnostic procedure. The history accepted as typical of duodenal ulcer is well known, but as has frequently been observed, a patient may present the classic history required in Moynihan's postulate without having the disease.

A diagnosis of duodenal ulcer should never be made without a thorough general examination. One requires chemical tests of the chyme, stools, urine, a blood count, a Wassermann test and, most

¹ Read at the annual meeting of the American Gastro-enterological Association, May, 1920.

important of all, fluoroscopy of the chest and abdomen. Lavage eight hours after a Riegel meal is also important, indicating at times a gastric stasis not shown with barium.

No one of the above measures will prove the existence of duodenal ulcer, but all will aid in the differentiation of other diseases with similar histories.

There are no chemical changes in the chyme typical of uncomplicated duodenal ulcer. Neither has the presence of occult blood in the chyme or stool any diagnostic value.

Hemorrhage is a late complication and proves neglect on the part of the clinician.

When we cease to recognize hyperchlorhydria and gastric neurosis as entities, we will overlook fewer early cases of duodenal ulcer.

Fluoroscopy of the chest will frequently disclose an enlarged aorta. This condition, with or without symptoms of an aortitis, is often present and suggests a syphilitic duodenal ulcer or visceral lues. Either of the latter diseases is easily confused with simple chronic duodenal ulcer.

Fluoroscopy of the pylorus and duodenum is an invaluable diagnostic aid when one sees an early hyperperistalsis followed by a later hypoperistalsis and duodenal distortion.

Bourcart² has found all patients with round ulcer of duodenum have sagging viscera.

This is quite contrary to twenty years' experience in my own work. Ulcer of the duodenum has rarely been associated in my patients with visceroptosis. In fact the presence of the latter has been considered a diagnostic sign against ulcer.

A roentgen appearance of local constriction in the cap of the duodenum with local tenderness is strong evidence of duodenal ulcer.

Palpation for a tender spot should be made while the patient is in front of the screen. This is the only accurate means to associate the roentgen defect with the pain point. In fact, pressure over the tender area will often cause spasmodic contraction which may be seen in the greater curvature.

Diagnostic acumen will not be improved so long as we are content to say the patient has either duodenal ulcer, appendicitis, cholecystitis or visceral lues. In most instances, painstaking study will enable one to decide upon the correct diagnosis.

Two patients with the so-called pathognomonic history were found to have an uncomplicated cholecystitis without disease in the duodenum. The following case illustrates another error in diagnosis after a rather careful history had been secured.

On January 26, 1914, Mrs. H. L., aged thirty years, was examined. Family history is negative. She had one miscarriage at three months' gestation. Five years ago she was operated upon for ectopic

² Rev. méd. de la Suisse romande, May, 1919.

pregnancy. The appendix, one ovary and both tubes were removed. Six months ago she began to have burning, distress and eructations three or four hours after meals. The same symptoms are felt from 1 to 2 A.M. She is relieved by food or soda. The pain is never sufficiently acute to require opiates. There is occasional nausea. The appetite is good and a tendency to constipation exists. Neither vomiting, chills, fever nor jaundice has been experienced. The patient cannot eat acid foods or condiments without later distress.

Examination: Hemoglobin, 80 per cent. Erythrocytes, 4,100,000. Leukocytes, 4500. Blood-pressure: Systolic, 125 mm.; diastolic, 85 mm.

Ewald test-meal: Free hydrochloric acid, 64; total acidity, 92. Benzidine test for occult blood markedly positive.

The stomach is empty six hours after a Riegel meal.

The stool indicates the presence of occult blood upon repeated examinations following a meat-free diet.

The urine is normal. Percussion, auscultation and fluoroscopy of chest is negative except for a slight enlargement of the aortic arch.

Fluoroscopy of the stomach reveals a persistent, rather extensive filling defect in the antrum pylori. Rectal and sigmoidoscopic examinations are negative. Diagnosis: Duodenal ulcer. An operation revealed a normal gall-bladder, pylorus and duodenum. The liver, so far as it could be observed, was covered with small yellowish-white spots.

The intra-abdominal glands were enlarged. A portion of the liver was excised, sectioned and found to show the histologic character of a gumma.

A few days after the operation a Wassermann test of the blood serum was two-plus positive, Craig system. Mercury and salvarsan effected an apparent cure, which has continued for six years.

Visceral syphilis is frequently accountable for errors in the diagnosis of duodenal ulcer.

The above-cited case in 1914 persuaded me that a routine Wassermann test should be made upon every patient with chronic digestive disturbances. This practice has been followed for the past five years.

It is indeed surprising to note the frequency of lues as the cause of apparent duodenal ulcer.

In a review of my case records numerous instances are observed in which gastro-enterostomy failed to cure duodenal ulcer permanently. An unrecognized lues of the viscera unquestionably accounted for some failures.

Castex and Mathis³ do not hesitate to affirm, on the basis of their personal observation that before the age of thirty years tardy inherited syphilis is the cause of 90 per cent. of the cases of gastric and duodenal ulcers and 10 per cent. are caused by acquired syphilis.

³ Abstract, Jour. Am. Med. Assn., 1918, lxxi, 321.

My own observation does not justify this high percentage. However, until the last five years some of my diagnoses have been incorrect.

After every method of examination—laboratory tests of chyme and stool and fluoroscopy of chest and abdomen have been employed—one should make a thorough search for the stigmata of syphilis.

After making a diagnosis of duodenal ulcer, if one finds signs suggestive of syphilis the patient should be given the benefit of anti-luetic treatment. This course is indicated even in the absence of a positive Wassermann test.

Internists, as a rule, will agree that the term "cure" following gastro-enterostomy is a misnomer and should be considered "arrested cases."

Late recurrence of duodenal ulcer is more frequently observed by the internist than by the surgeon.

Errors in diet with the use of condiments and acids will often cause a recurrence of the hunger and night pain, months or even years after operation. A patient is with difficulty convinced that life-long attention to proper diet is necessary to prevent a return of ulcer after gastro-enterostomy.

Occasionally operation fails to reveal a duodenal ulcer.

A patient with a typical duodenal history was operated upon and the surgeon failed to demonstrate any evidence of ulcer. A few days later death ensued, following cerebral hemorrhage. At necropsy a linear ulcer in the posterior aspect of the duodenum, with only slight cicatrization, was seen. This patient would probably have been amenable to medical treatment.

Rigid medical treatment in a hospital should be employed before a surgical operation is undertaken. I am firmly convinced that haphazard medical treatment is responsible for many failures.

Absolute gastric rest is impossible during life, but every effort should be directed to approximate that state.

The patient should be given an effective dose of oleum ricini with the beginning of the treatment. He should then be kept in a horizontal position in bed for ten to fourteen days. During this time he must use the bed-pan and not be allowed to raise his head above the pillow. Thirst should be met with clysmata of water (not saline solution). Nutrient enemata may be added.

The duodenal tube is a foreign body near the seat of ulceration and should not be employed. It is, furthermore, usually a source of annoyance to the patient.

Alkaline drugs are well known as stimuli to gastric secretion at an interval after their ingestion, and should be omitted.

Nothing is to be given by the mouth during this ten to fourteen day period. A modified milk and oatmeal diet is then administered at frequent intervals. Quantity and variety of non-irritating foods are then added during the remainder of the four weeks' hospital

residence. At no time during the treatment is more than a three-hour interval allowed to elapse between feedings.

The patient must spend most of the four weeks in bed. Following the hospital treatment, six meals daily must be taken for at least one year. Irritating foods, such as acids, condiments and fried foods, are forbidden.

A regimen such as outlined above will arrest the symptoms and apparently cure an astonishingly large number of patients for long periods.

After the physician has convinced himself by antiluetic treatment or by rest cure in bed, or by both, that the patient is unimproved; then and then only should a surgical operation be undertaken.

CORRECTIONS VERSUS COMPENSATION OF PHYSICAL DEFECTS.

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THE inauguration of a program of required physical training for Freshmen in Harvard College necessitated a survey of the general methods already in use. A scrutiny of the multitude of methods employed in many places readily showed there is no generally accepted agreement as to the fundamental principles involved in physical training. There was, of course, a common agreement that physical training is generally beneficial. Most people accept the dictum that the human body is definitely benefited by regular physical exercise. It is also generally agreed that the benefits of physical exercise can be traced to the mind as well as to the body. There is, however, no agreement as to the proper methods to be pursued in attaining this end. As a matter of fact the discussion and also the practice of the procedure to attain the general end of improved bodily condition is very largely concerned with a discussion of methods and fails to take into account the underlying principles. One finds that calisthenics, special gymnasium work, military drill and every form of sport are each heartily recommended as the best method of achieving beneficial physical effects from physical training.

It has seemed to us that methods were entirely secondary to the underlying principles. It has seemed to us that muscular exercise represented by so many foot pounds of work could be performed in a wide variety of ways. It also has seemed to us that the delivery